

J. P. RAYMOND.
PAPER BAG CLOSURE.

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Sherwood R Taylor.
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Fig. 5

James T. Raymond
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PAPER-BAG CLOSURE.

SPECIFICATION forming part of Letters Patent No. 598,440, dated February 1, 1898.

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To all whom it may concern:

Be it known that I, JAMES P. RAYMOND, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Means for Closing Paper Bags, of which the following is a specification.

My invention is an improved means for crimping and tying paper bags used for packing flour. Its object is to provide means to hold the mouth of the sack open while the tie-string is carried around it and which will also form the crimps necessary to produce a complete closure. These objects I attain by means illustrated in the accompanying drawings, in connection with which the invention will be first fully described, and then particularly referred to and pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of my improvement attached to the upright of an ordinary weighing-scale. Fig. 2 is a detail view, in central vertical section, upon an enlarged scale, of the hinged arm and skeleton crimper it carries and means for carrying the tie-string around the mouth of the bag. Fig. 3 is a detail similar to Fig. 2, showing the position of the crimper in its relation to the mouth of the bag after the same is closed. Fig. 4 is a detail view, also similar to Fig. 2, of a modification in which the gear-wheels are dispensed with. Fig. 5 is a detail of another modification, dispensing with the hinged arm as well as the gear-wheels.

Referring to the parts, A represents the beam or upright of a weighing-scale, to the front of which is attached a sliding plate B, which has formed integral with it an upper bracket-arm b , to which is hinged the arm C, which carries the crimper and string-carrying device, and also a lower bracket b' , which carries the string-tightener, and also a segment or hoop b^2 , which supports the sack while it is being tied.

Referring first to Figs. 1, 2, and 3, inclusive, the arm C is vertically perforated and screw-tapped to receive the screw-threaded end d of the stud bolt or shaft d' , upon the lower end of which the crimper is secured. Upon the same shaft d' is journaled the pinion e , which carries the tie-carrying arm E. The pinion e meshes with a pinion f , which is secured upon a shaft journaled in the arm C.

Upon the upper end of this shaft is secured a spring arm or lever F, by which the pinion f is revolved and through it the pinion e and the tie-carrying arm E. The handle or knob end of the lever F has a detent on its under side engaging a groove c on top of the arm C to hold the arm rigidly in place after it has completed a revolution to carry the tie-string around the mouth of the bag. The arm E is longitudinally slotted and grooved upon the upper side to receive the bolt and guide of the extension e' , which is held in the desired position by a bolt and nut e^2 , which passes through a boss of the extension-arm e' and through the slot in the fixed arm E.

To the upper end of the boss of arm e' is pivoted the arm e^3 by means of its slotted upper angle e^4 , the end e' extending out over the top portion of the arm e^3 . Said arm e^3 is held in its vertical position, as shown in full line, by spring-latch e^5 .

The purpose of making the arm extensible is to accommodate the device for different sizes of bags, and the purpose of hinging the vertical arm e^3 is to allow its lower end to be drawn toward the mouth of the bag as it is contracted by tightening the string. The crimper D consists of the spider d^2 , having, preferably, six arms, the ends of which have perforated bosses d^3 to receive the ends of the bent-wire frame d^4 . The ends of the wires d^4 are held in the bosses d^3 by set-screws and extend laterally and then bend down at an incline, so that the upper bent corners are nearly in contact with the bag-mouth. They then incline toward the center to horizontal portions d^5 , and from there the inner ends incline to a point and are locked together at the bottom for strength. The hinge c' is preferably a rule-joint hinge, and the arm C is coupled to the bracket d by a bolt and wing-nut c^2 , by which the hinge-joint is clamped sufficiently tight to allow the arm to be moved around its pivot and held in its lower position without moving while the tie is being drawn tightly to form the closure.

The operation of the device is as follows: The arm being thrown up, a sack is placed on the scale-platform against the segment b^2 , which has been adjusted to the proper position. The arm C is then lowered, bringing the crimper D in the mouth of the bag, as seen in Fig. 3. The end of the string is then

caught in the lower slotted end of arm e^3 . The string end is held while the arm F is turned once around. The string is then given a loop and drawn tightly, swinging the arm e^3 inwardly from its position as the mouth of the bag slides down the former until the string is drawn as tightly as it is convenient to do by hand. The free end of the string is then placed over a hook g , which projects from the periphery of a grooved segment G, which is journaled in the bracket b' . The segment is then swung around by its handle g' until the string is drawn tightly, forming the closure, as seen in full line in Fig. 3, when the arm C is drawn up and the closed bag removed preparatory to placing another in position.

In the modification shown in Fig. 4 the arm C is perforated near the end and has a stud-bolt d^6 held rigidly in it by a nut on the top, and the crimper D is also held rigidly against the lower end of the stud-bolt. The handle F' and the arm E both project from a hub f' , which is journaled upon the stud d^6 , the detent of the lever-handle engaging the notch in the under side of the arm C. The crimper D and the string-carrying arms are identically the same as in the preceding figures.

In the modification shown in Fig. 5 the crimper is secured upon the lower end of the bolt or shaft d^7 and the arm F² and string-carrying arm E are secured upon a sleeve-shaft d^8 , which slides freely up and down in the perforation in the arm C'. In this case the arm C' is rigidly fixed and the crimper and folding arms are drawn up out of the mouth of the bag by sliding the tubular shaft d^8 up through the perforation in the arm C, and when the bag is placed in position dropping it down. The weight of the spider and attachments will hold the crimping-frame in the mouth of the bag with sufficient force to prevent the bag from tilting to one side or the other while it is being tied, and also with sufficient weight to form the crimp when the string is drawn around the mouth of the bag.

The sliding plate B is secured to the upright A by bolts b^3 , which pass through longitudinal slots in the plate and tap into the upright A. The purpose is to adjust the plate up and down on the upright to accommodate bags of different heights. It is preferred to secure this plate to the standard A of the scale to avoid handling the sack twice; but it is obvious that the plate may be secured to any rigid support—for instance, the upright of a building.

It will be apparent to those who are skilled in the art, after examining my drawings and the description of them, that many mere mechanical changes may be made without departing from the spirit or scope of the invention. I do not, therefore, limit myself to the specific details shown and described.

What I claim is—

1. In a device for closing paper sacks, the supporting-arm and a skeleton frame or crimper depending therefrom to enter the

mouth of the bag and hold it expanded while the tie draws the neck together and forms the crimps as the closure is completed, combined and arranged substantially as shown and described.

2. The combination, substantially as hereinbefore set forth, of the supporting-arm, the crimping spider-frame depending therefrom, a rotating shaft supported by said arm, the tie-carrying arm upon said shaft, and a lever to revolve said shaft and arm to carry the tie around the mouth of the filled bag.

3. The combination, substantially as hereinbefore set forth, of the supporting-plate having a bracket projecting laterally therefrom, the supporting-arm hinged to said bracket, a stud-bolt secured in said supporting-arm, the spider or crimping device secured upon the lower end of the said bolt, a gear-wheel journaled upon said bolt, a shaft journaled in said arm parallel with the bolt supporting the crimping device, and a pinion secured thereon to mesh with the pinion of the tie-carrying arm, the tie-carrying arm, a lever secured upon the upper end of said journal to revolve the pinions and carry the string-tie around the mouth of the bag, for the purpose specified.

4. In a device for closing the mouths of bags, the supporting-plate having a bracket-arm projecting therefrom, the arm hinged to the said bracket, a stub-bolt depending from said arm, a spider or crimping frame secured to the lower end of said bolt, a pinion journaled upon said bolt and having formed integral with it an arm, the said arm being longitudinally slotted, a tie-carrying arm adjustable in a slot in said arm, a shaft journaled in said movable arm and having a pinion secured to mesh with the pinion of the said slotted arm, a spring-lever secured upon the upper end of said shaft, and having a detent at its end to engage with the movable arm to hold the parts rigid after the string has been carried around the mouth of the bag, substantially as hereinbefore set forth.

5. The combination of the adjustable plate having bracket-arms projecting therefrom, a movable arm hinged to the upper bracket of said plate and having a depending stud-bolt secured thereto, the skeleton crimper secured upon the lower end of said bolt, a tie-carrying arm projecting from a hub, journaled upon said bolt, a segmental support adjustable in the lower bracket of said plate, a segment secured upon the shaft movable in said lower bracket and having a projecting hook to receive the string, and a handle to revolve said segment and draw the tie tightly around the neck of the bag to form a complete closure, substantially as and for the purpose hereinbefore set forth.

JAMES P. RAYMOND.

Witnesses:

GEO. J. MURRAY,
SHERWOOD R. TAYLOR.